

**1949-56 Three & Four Speed
C, D, DU, F, G, GM, PW.**

1. Remove transmission.
2. Remove clutch housing pan.
3. Remove clutch release bearing.
4. Mark clutch cover and flywheel to assure proper balance when clutch is installed.
5. Unfasten clutch cover from flywheel and take out clutch and disc.

**B-1, B-2, B-3 & B-4 Models H,
HH, J, KA, EU, R, T, V, Y.**

1. Remove all floor boards.
2. Remove transmission.
3. Remove clutch housing pan.
4. Remove clutch release bearing.
5. Disconnect booster brake control valve linkage at brake pedal, master cylinder and frame bracket. Then remove control valve.
6. Disconnect clutch release fork bracket at clutch housing.
7. Remove clutch release fork flange cap screws and pull release fork

with pedal and bushings out of clutch housing far enough to provide clearance for clutch assembly to pass cross shaft clutch release fork.

K & L Models

1. Remove the transmission.
2. Remove the clutch housing pan.
3. Remove clutch fork, bearing and sleeve assembly.
4. Mark clutch cover and flywheel to assure proper balance when clutch is installed.
5. Remove clutch cover retaining screws and pull the pressure plate clear of flywheel and, while supporting pressure plate, slide the disc from between flywheel and pressure plate. On some models it may be necessary to rotate the pressure plate to the point of maximum clearance. Then allow plate assembly to drop while tilting the top edge of the clutch cover back to clear the frame crossmember.

CLUTCH, INSTALL

All Models

When installing the clutch, coat the pilot bearing in the end of the crankshaft with wheel bearing grease. Clean the surfaces of the flywheel and pressure plate, making certain no oil or grease remains on these parts. Hold the cover plate and disc in place and insert a special clutch aligning tool or a spare clutch shaft through the hub of the disc and into the pilot bearing in the crankshaft. Bolt the clutch cover loosely to the flywheel, being sure that punch marks previously made are lined up.

To avoid distortion of the clutch cover, tighten the cover bolts a few turns each in progression until all are tight.

Guide the transmission into place, using care to see that the driven disc is not bent. Use a floor jack to support the transmission so that the clutch shaft may be guided through the driven disc safely. Finally, adjust the clutch pedal free travel.

Manual Shift Transmission Section

TRANSMISSIONS

Year	Make ^①	Model ^①	Speeds	Type	Oil, Pts.
1949	Dodge	....	3	Synchromesh	3½
1950-58	New Process	....	3	Synchromesh	3½
1955-58	Warner	T87D	3	Synchromesh	6
1949-56	Warner	T9, T9A	4	Spur Gear	6
1950-56	New Process	....	4	Synchromesh	5½
1957-58	New Process	420	4	Synchromesh	5½
1949-56	New Process	....	5	Helical Gear	9¾
1950-56	New Process	....	5	Synchromesh	9½
1957-58	New Process	540 ②	5	Synchromesh	9½
1957-58	Clark	265 ②	5	Synchromesh	12
1954-57	Clark	290 ②	5	Helical Gear	16
1958	Clark	300 ②	5	Synchromesh	12
1956-58	Spicer	5831 ②	3	Auxiliary	4
1958	Spicer	6041 ②	4	Auxiliary	8
1956-58	Spicer	6231 ②	3	Auxiliary	8

① See name plate on housing for make and model identification.

② See the *Stock Transmissions Chapter* for service on this unit.

TRANSMISSION, REPLACE

**1949-58 Three & Four Speed
(Except C.O.E.)**

Remove the lower floor board and mat. Disconnect battery ground cable, speedometer cable, universal joints, and drop center bearing (if so equipped). Remove the nuts which hold the transmission to the clutch housing and insert pilot studs in place of the two upper studs. Withdraw the transmission.

To install, reverse the foregoing operations.

**1949-58 Five Speed
(Except C.O.E.)**

Remove the floor mat and cover over

transmission. Disconnect speedometer cable, brake cables and propeller shaft. Drop center bearing if so equipped.

Place a jack under the transmission and remove the cap screws which hold the transmission to the clutch housing. Pull the transmission with the jack straight back about 6 inches. Lower the jack slightly and move the transmission to the left so that the main drive gear will clear the clutch housing.

To install, reverse the foregoing operations.

1949-58 C.O.E. Models

Because of a frame crossmember at the rear of the transmission, remove the unit as follows:

Remove transmission cover. Discon-

nect propeller shaft and drop center bearing if truck is so equipped. Place a jack under the transmission and detach the transmission from the clutch housing. Pull the transmission straight back with the jack about 6 inches. Lower the jack slightly and move the transmission to the left so that the main drive gear will clear the clutch housing.

To install, reverse the foregoing procedure.

**TRANSMISSION REPAIRS
1949 THREE SPEED**

Disassemble

1. Remove transmission cover assembly.
2. Use puller to remove universal joint flange and brake drum.
3. Remove speedometer pinion and oil seal.
4. Disconnect hand brake rod at brake band and unfasten hand brake linkage from transmission.
5. Remove brake support, oil seal and hand brake assembly.
6. Remove speedometer drive gear.
7. Pull mainshaft far enough to the rear to install a puller on the rear bearing and remove bearing.
8. Lift mainshaft and gears out of case.
9. Slide low and reverse gear off mainshaft.
10. Remove snap ring and slide clutch gear and second speed gear from mainshaft.
11. Remove countershaft lock screw and lock.
12. Drive countershaft out of rear end of case, allowing gear cluster to drop to bottom of case.

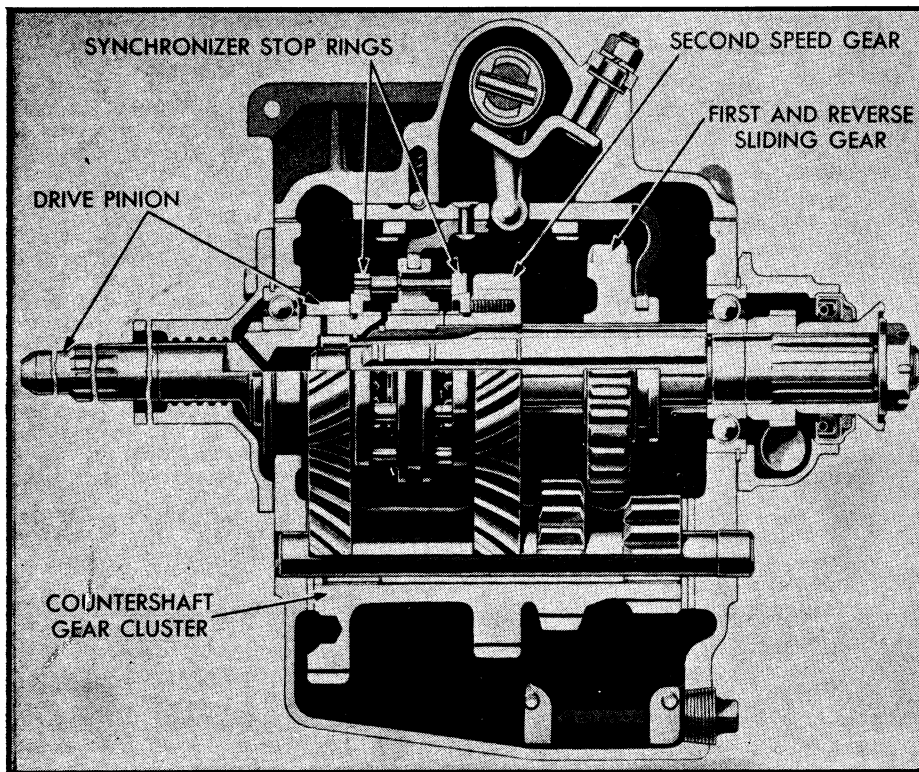


Fig. 1 Three-speed synchromesh transmission with remote control, 1950-58 New Process

13. Pull clutch shaft and gear out through front of case.
14. Remove lock nut from clutch shaft bearing and pull off bearing.
15. Lift cluster gear and related parts from bottom of case.
16. Drive reverse idler shaft out through rear of transmission and lift out gear.

Assemble

When assembling the transmission, all operations are performed in the reverse order of that given for disassembling, but the following precautions must be taken:

1. The clutch shaft and mainshaft rear bearings are held in place by means of snap rings. Whenever these snap rings are removed, they should be replaced with new rings. Snap rings should not be used a second time.
2. Countershaft end play should be from .004" to .015".
3. When inserting the bearing rollers in the ends of the countershaft gear, pack the ends of the gear with a high grade medium cup grease to hold the rollers in place. Countershaft gear thrust washers should be placed in correct position after they have been coated with cup grease. At the front end of the transmission, the small spacer is to be placed between the bronze washer and the countershaft bearings.
4. Be sure to tighten the countershaft and reverse idler shaft lock plate.
5. When installing the clutch shaft bearing, the lock nut must be tightened securely and staked at the notches provided on the shaft.
6. When installing the transmission cover, place the sliding gear and clutch sleeve in neutral position.

1950-58 NEW PROCESS 3 SPEED

Disassemble. Figs. 1, 2 & 3

1. Drain oil from transmission.
2. Remove cover assembly.
3. Remove nut at end of mainshaft and pull off flange and brake drum.
4. Remove speedometer drive pinion and oil seal.
5. Disconnect hand brake rod at band and remove horseshoe clip which anchors hand brake linkage to transmission.
6. Remove cap screws which hold brake support to transmission case and lift off support, oil seal and brake assembly.
7. Remove speedometer drive gear.
8. Remove main drive gear bearing retainer.
9. Pull mainshaft and gear assembly out of the rear of the case far enough to remove mainshaft rear bearing.
10. Lift mainshaft and gears out of case.
11. Slide low and reverse gear off mainshaft.
12. Remove clutch gear snap ring and slide off synchronizer and second speed gear assembly.
13. Remove countershaft lock plate.
14. Drive countershaft out of the rear end of the case, using a special arbor and soft hammer, allowing the gear cluster to drop to the bottom of the case.
15. Pull main drive gear out through

- front of case.
16. Remove main drive gear lock, lock and bearing.
17. Lift out countershaft gear cluster and thrust washers. By removing the arbor the bearings and spacer will be available for inspection.
18. Drive reverse idler gear shaft to the rear of case and lift out gear.

Assemble

The bearings on the rear end of the main drive gear and mainshaft are held in place by snap rings. Whenever these snap rings are removed, they should be replaced with new ones.

All assembly operations are performed in the reverse order of that given for disassembly. However, the following must be observed:

1. Countershaft end play should be held to .004" to .015". Install new thrust washers to achieve this result.
2. When inserting the bearing rollers in the ends of the countershaft gear, pack the ends of the gear with medium cup grease to hold the rollers in place.
3. The countershaft gear thrust washers should be placed in correct position after they have been coated with cup grease. At the front end of the transmission the small spacer is to be placed between the bronze washer and countershaft bearings.
4. When installing the main drive gear the lock nut must be securely tightened and staked at the notches provided on the shaft.
5. The synchronizer should be assembled so the slots of the stop ring engage the plates in the clutch gear sleeve.

1955-58 WARNER T87D 3 SPEED

Disassemble. Fig. 4

1. Remove transmission cover.
2. Unscrew companion flange nut.
3. Remove main drive gear and mainshaft rear bearing retainers from case.
4. Slip speedometer drive gear, rear bearing and oil washer from mainshaft.
5. Pull main drive gear and bearing out through front of case until it contacts countershaft gear.
6. Slide mainshaft assembly through rear of case until it clears main drive gear and then lift it out through top of case. Be sure to account for 16 pilot needle bearings when mainshaft is removed.
7. To disassemble main shaft, remove retainer snap ring and use sliding gear to tap synchronizer and bushed gear from mainshaft.
8. To remove main drive gear, remove snap ring holding bearing on main drive gear. Push drive gear and bearing back into case until outside snap ring seats snugly against case. Then with a soft hammer, tap shaft gently toward inside of case until bearing is freed. Main drive gear can then be lifted out through top.
9. To remove countershaft assembly,

remove capscrew and lock plate which holds countershaft and reverse idler shaft in position. Drive countershaft out through rear of case, and lift out cluster gear and thrust washers.

10. To remove reverse idler gear and shaft, drive shaft out through rear of case and lift out gear.
11. The synchronizer clutch hub and sleeve are held together by two retaining springs located on each side of the clutch hub. The clutch sleeve can be removed from the hub by removing the retaining springs and supporting the outside diameter of sleeve and pressing on hub. Use care when disassembling not to lose the three shifting plates.

Assemble

Reverse the order of the foregoing procedure to assemble the transmission, noting the following:

1. In reassembling the synchronizer, be sure to place end of each retainer spring in the same shifting plate with the loose ends located in same position on both sides to equalize the tension on all three shifting plates. Be sure to index etched marking on hub and sleeve.
2. When installing the countershaft, see that a bronze thrust washer is located at the front and a bronze and steel washer at the rear of the shaft with the steel washer placed next to the gear.
3. A helpful suggestion in reassembling the mainshaft pilot bearings is to use a rubber band to hold them in place on the shaft until the assembly is started in the main drive gear. The rubber band can then be cut and removed.
4. When installing the main drive gear bearing retainer, see that the oil drain in the retainer is located on the bottom.

**1949-56 WARNER
4 SPEED**

Disassemble. Fig. 5

1. Apply hand brake and remove nut from companion yoke and brake drum.
2. Release hand brake and remove hand brake band, drum and companion yoke.
3. Take off transmission cover assembly.
4. Remove clutch shaft and bearing.
5. Remove speedometer pinion.
6. Remove hand brake support, oil seal and speedometer drive gear.
7. Pull mainshaft out through rear of case. Slide gears off shaft as it is being withdrawn.
8. Remove countershaft lock screw and lock.
9. Drive countershaft out through rear of case.
10. Remove countershaft gears, bearings and spacer.
11. Drive reverse idler shaft out through rear of case and lift out gear.

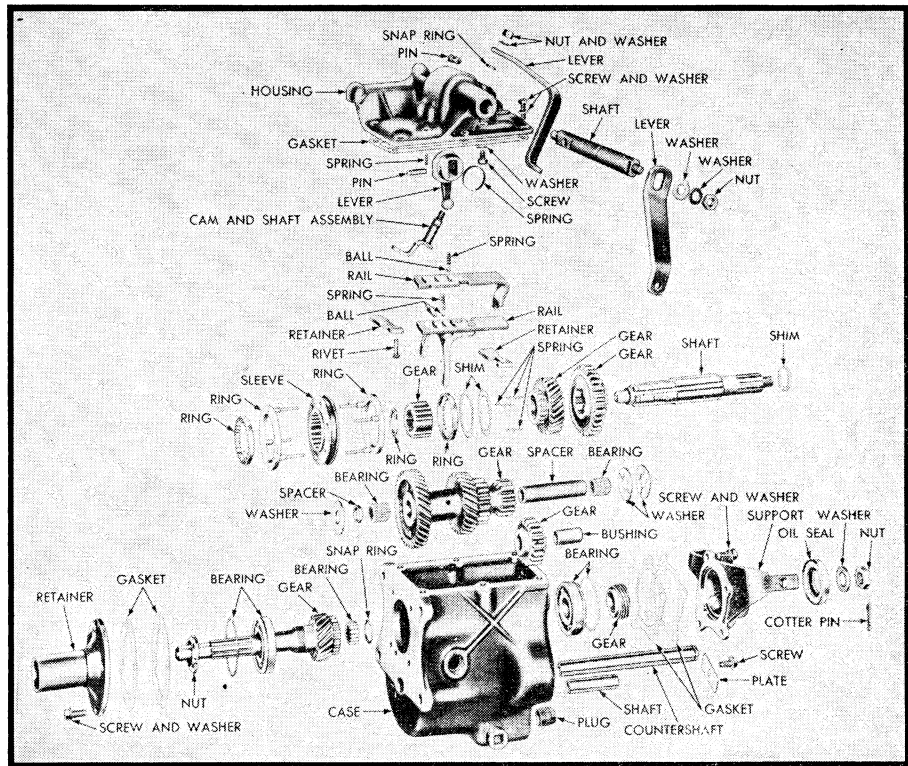


Fig. 2 New Process three-speed synchromesh transmission with remote control, 1950-58

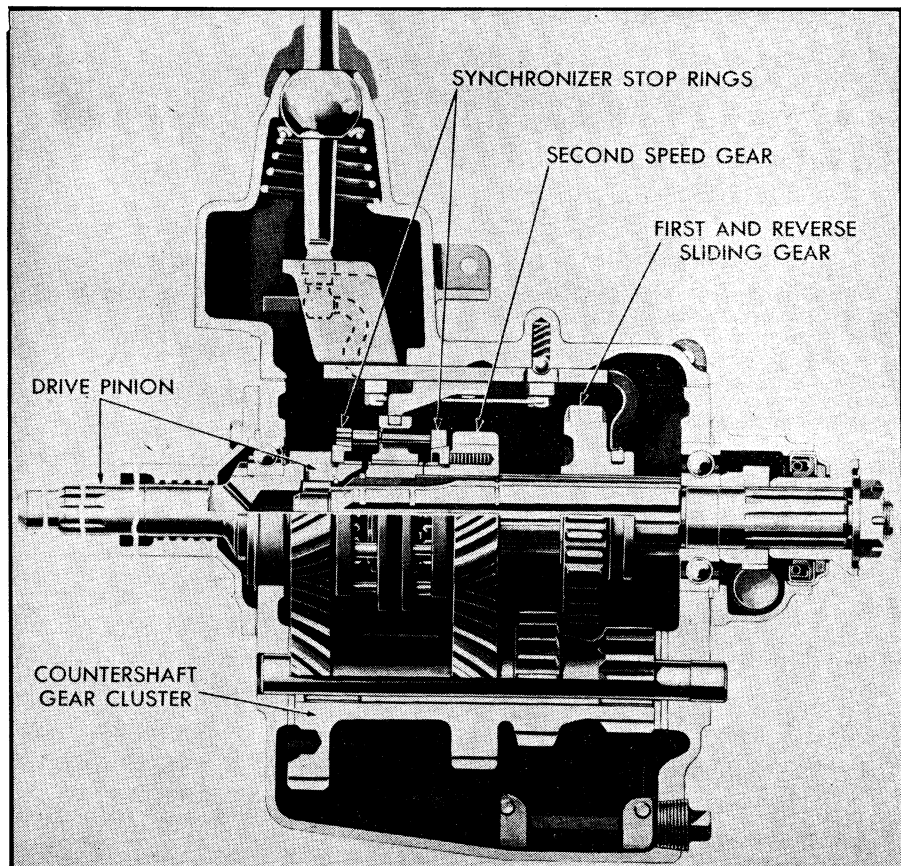


Fig. 3 Three-speed synchromesh transmission without remote control, 1949-55 New Process

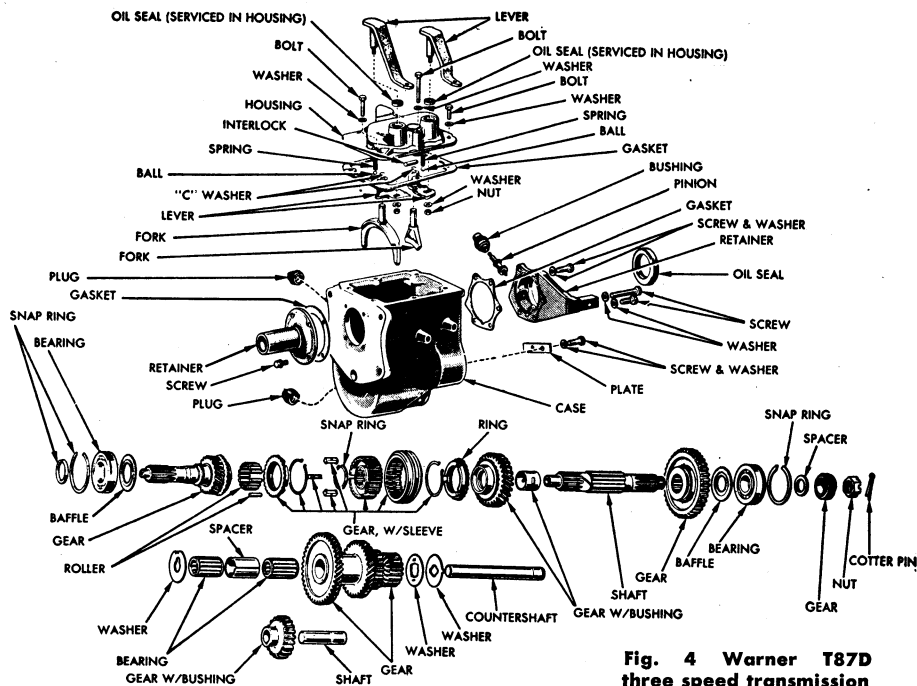


Fig. 4 Warner T87D three speed transmission

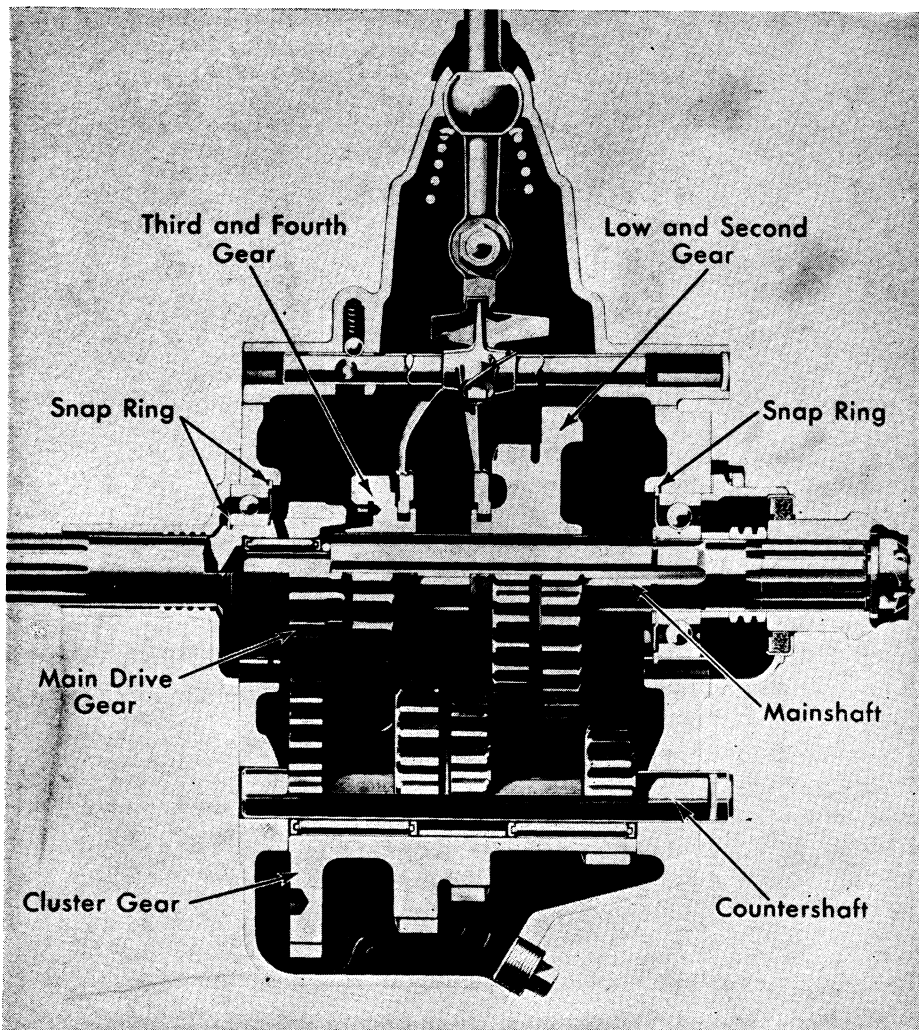


Fig. 5 Warner four-speed sliding gear transmission, 1949-56

Assemble

Reverse the order of the disassembly operations to assemble the transmission. If snap rings have been removed for any reason, do not use them a second time; install new ones.

Paper gaskets, .010" thick, are used between the rear bearing retainer and the transmission case. When assembling the transmission, install the rear bearing retainer without the gaskets and measure with a feeler gauge between the retainer and case. Then install sufficient paper gaskets to allow from .003" end play to .003" preload (tension) on rear bearing. For example, if the clearance between the retainer and case is .012", install one .010" paper gasket, which places a .002" preload on the bearing.

1950-56 NEW PROCESS 4 SPEED SYNCHROMESH

Disassemble. Figs. 6 & 7

1. Set hand brake and remove companion flange nut.
2. Remove hand brake band.
3. Pull off brake drum and companion yoke.
4. Remove transmission cover assembly.
5. Remove rear bearing retainer and speedometer drive gear.
6. Remove main drive gear retainer, drive gear and bearing.
7. Drive out reverse shift rail and remove shift fork.
8. Remove snap ring and pull mainshaft rear bearing. Remove shim pack and keep together for reassembly.
9. Remove snap ring and slide synchronizer off mainshaft. Then lift mainshaft out of case.
10. Remove reverse idler lock, pull idler shaft and lift gear from case.
11. Remove rear countershaft retainer and bearing. Then remove front countershaft retainer, cap screw and lock plate, and remove bearing.
12. Lift countershaft assembly from case.
13. To disassemble the cover, place lever in neutral and remove shift fork lock wires and screws.
14. Remove expansion plugs from recesses in forward end of cover housing and tap shift shafts out of housing. To prevent loss of detent balls, cover openings with cloth when removing shafts.
15. Clamp main drive gear in a vise and remove the bearing lock nut.
16. To disassemble mainshaft, remove snap ring and remove synchronizer clutch hub. Remove third speed gear, spacer and bushing. Remove second speed gear, thrust washer and rollers.

Assemble

1. Install countershaft and bearings.
2. Place reverse gear in case with shifter groove toward front. Drive shaft into case and through reverse gear.
3. Place reverse gear shifter fork in case, engaging groove in reverse

- gear with fork. Drive shifter rail into case and through shifter fork.
4. Press main drive gear bearing on shaft (if removed), install nut and tighten securely. Install snap ring on bearing.
 5. Lubricate pilot bearing and install in main drive gear bore. Coat spacer washer with grease and place in main drive gear bore.
 6. Install main drive gear in case without gasket. Measure clearance between retainer and case with feeler gauge. Then select a gasket that is the same thickness as the clearance measured with the feeler gauge, or use a gasket of the nearest oversize. Slide gasket and retainer over shaft, position gasket so recess in gasket is over drain hole in case. Secure retainer with capscrews and washers.
 7. To assemble mainshaft, place low and reverse gear in case—to be installed after mainshaft is lowered into case.
 8. Coat second speed gear rollers and thrust washers with grease and insert rollers in gear.
 9. Install one thrust washer on mainshaft. Place second speed gear on shaft with spur gear teeth toward rear of shaft. Install other thrust washer on shaft.
 10. Install bushing on mainshaft, aligning bushing tangs with splines.
 11. Install third speed gear on mainshaft with shortest gear teeth toward front. Then mount gear on bushing.
 12. Install synchronizer gear on mainshaft and secure with new snap ring. Check snap ring for proper thickness by testing third speed gear end play. End play is from .006 to .008" and snap rings are available in steps of .002" each to provide proper thickness and correct end play.
 13. Lower mainshaft assembly into case and slide low and reverse gear on shaft.
 14. Move mainshaft through rear bearing hole far enough to allow installation of remaining mainshaft parts.
 15. Slide synchronizer parts on mainshaft separately.
 16. Slide mainshaft pilot into main drive gear pilot bearing.
 17. Place shim pack on rear of mainshaft.
 18. Install snap ring in rear mainshaft bearing groove. Lubricate bearing and install on mainshaft, tapping bearing into case until snap ring seats on face of case.
 19. Install spacer, speedometer gear, gasket, rear bearing retainer and oil seal, companion flange, washer and nut. Lock transmission in two gears and tighten flange nut to 95-130 lbs. ft. torque.
 20. With gears in neutral check mainshaft gears for freedom of rotation. Then shift into all gears and check for free rotation.
 21. Check synchronizer end play with feeler gauges diametrically opposite each other. End play should be from .040" to .060". If not within these limits, adjust by removing or replacing shims at the rear of the mainshaft to obtain proper clearance.

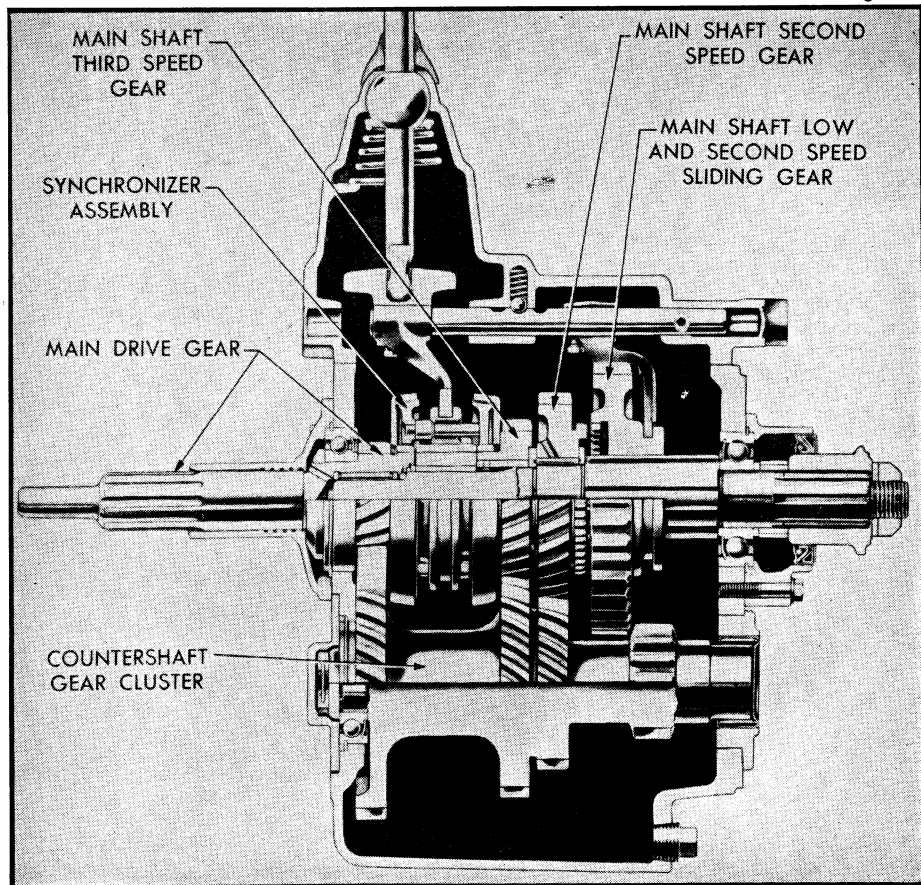


Fig. 6 New Process four-speed synchromesh transmission, 1950-56

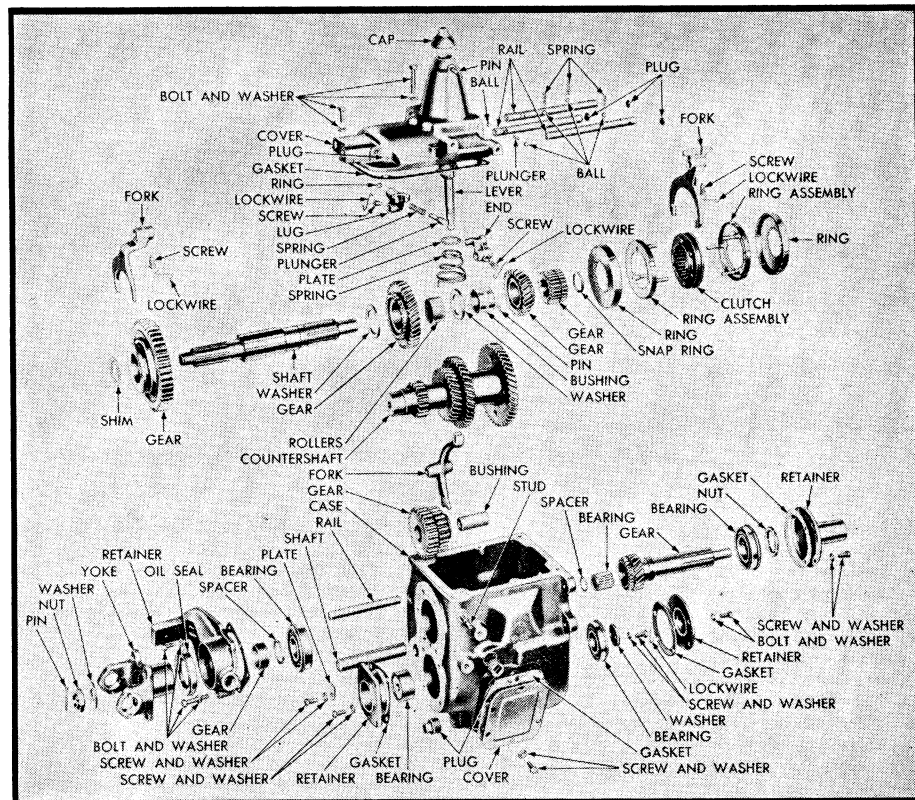


Fig. 7 New Process four-speed synchromesh transmission, 1950-56

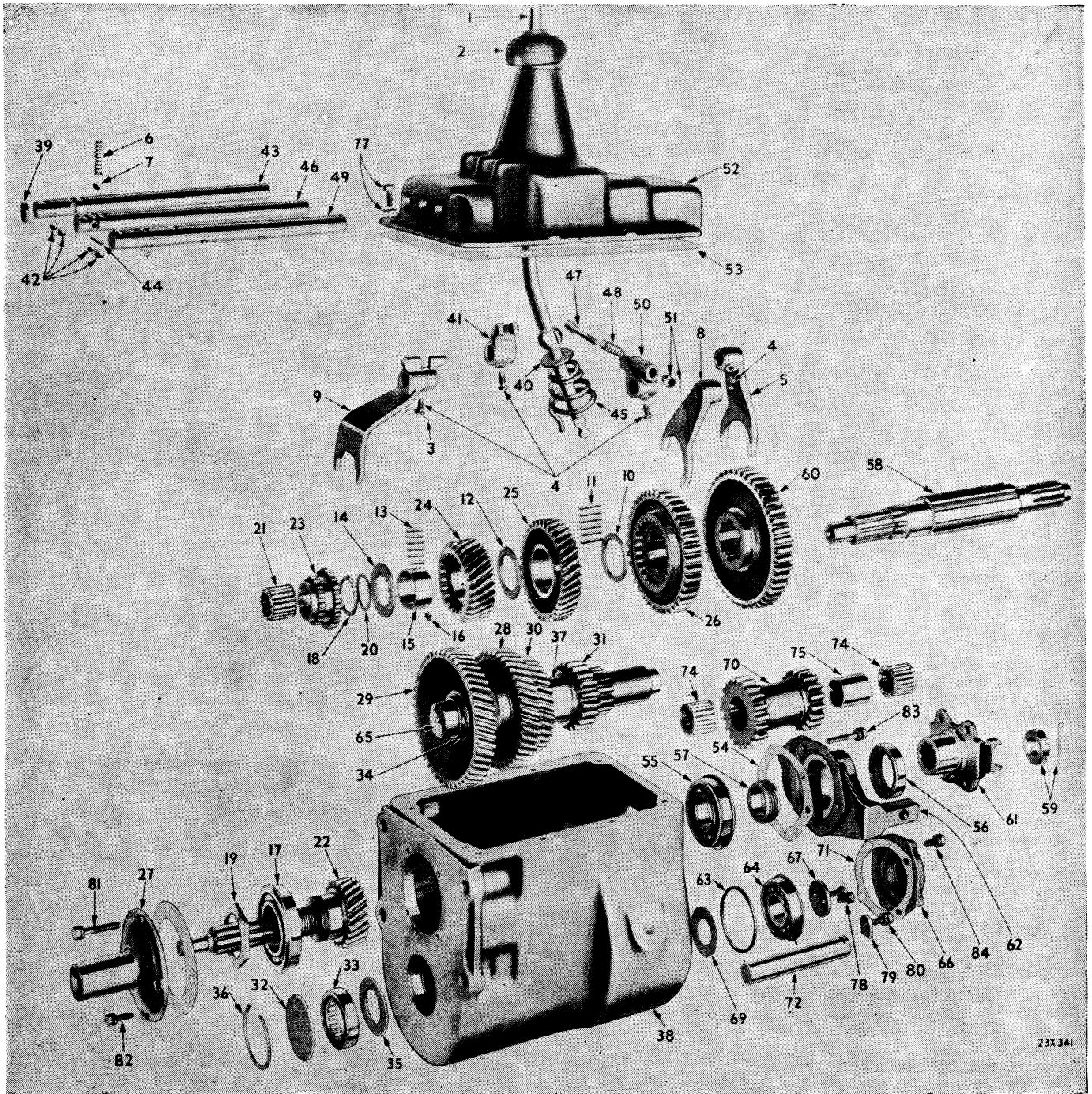


Fig. 8 New Process five-speed transmission without synchromesh. Typical of all 1949-56

1. Gearshift lever
2. Gearshift lever dust cover
3. Lock wire
4. Shift rail screws
5. Low and reverse shift fork
6. Shift rail poppet spring
7. Shift rail poppet
8. Second and third shift fork
9. Fourth and high shift fork
10. Third speed gear locating washer
11. Third speed gear roller
12. Fourth speed gear locating washer
13. Fourth speed gear roller
14. Fourth speed bearing retainer washer
15. Fourth speed gear roller bushing

16. Fourth speed gear bushing retainer pin
17. Main drive gear bearing
18. Fourth speed gear retainer ring
19. Main drive gear bearing retainer nut
20. Fourth speed gear shims
21. Mainshaft pilot bearing
22. Main drive gear
23. Fourth and fifth speed sliding gear
24. Fourth speed gear
25. Third speed gear
26. Second and third speed sliding gear
27. Main drive gear bearing retainer
28. Countershaft fourth speed gear
29. Countershaft drive gear

30. Countershaft third speed gear
31. Countershaft second and reverse gear
32. Countershaft front bearing retainer plug
33. Countershaft front bearing
34. Countershaft drive gear retainer ring
35. Countershaft front bearing washer
36. Countershaft front bearing retainer ring
37. Countershaft second and third speed gear spacer
38. Transmission case
39. Gearshift rail hole plug

22. Assemble and install transmission cover.

1949-56 NEW PROCESS 5 SPEED HELICAL

Disassemble. Fig. 8

1. Apply hand brake and remove nut from companion yoke and brake drum.
2. Disassemble hand brake adjusting mechanism and remove linkage and band.
3. Pull off brake drum and companion flange.
4. Remove transmission cover assembly.
5. Remove speedometer drive pinion.
6. Remove rear bearing retainer, oil seal and speedometer drive gear.
7. Remove clutch shaft bearing retainer, gear and bearing.
8. Pull mainshaft assembly out of rear of case far enough to install a puller and remove mainshaft rear bearing.
9. Lift mainshaft and gears out of case.
10. Remove fourth speed gear retainer ring, shims, retainer washer, bush-

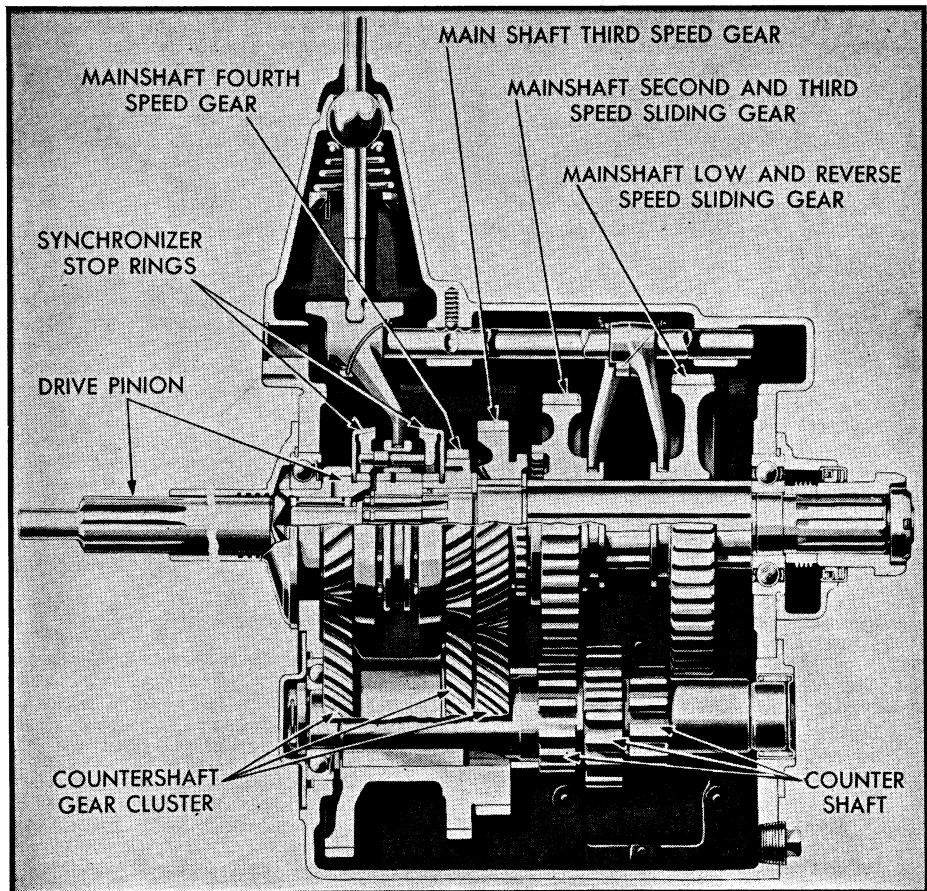


Fig. 9 New Process five-speed synchronesh transmission, 1950-56

40. Gearshift lever spring seat
41. Gearshift second and third rail lug
42. Gearshift rail interlock balls
43. Second and third shift rail
44. Gearshift rail interlock pin
45. Gearshift lever spring
46. Fourth and fifth shift rail
47. Gearshift low and reverse latch plunger
48. Latch plunger spring
49. Low and reverse shift rail
50. Low and reverse shift rail lug
51. Latch plunger nut
52. Transmission cover
53. Cover gasket
54. Bearing retainer gasket
55. Mainshaft rear bearing
56. Rear bearing oil seal
57. Speedometer drive gear
58. Mainshaft
59. Companion yoke nut
60. Low and reverse sliding gear
61. Companion yoke
62. Rear bearing retainer
63. Countershaft rear bearing spacer
64. Countershaft rear bearing
65. Countershaft
66. Countershaft rear bearing retainer
67. Retainer washer
68. Countershaft gear key
69. Countershaft rear bearing washer
70. Reverse idler gear
71. Rear bearing retainer gasket
72. Reverse idler gear shaft
73. Power take-off cover
74. Reverse idler gear shaft bearing
75. Bearing spacer
76. Drain plug
77. Case cover screw
78. Rear bearing retainer washer and lock
79. Reverse idler gear shaft lock
80. Lock screw
81. Retainer screw and lock, upper
82. Retainer screw and lock, lower
83. Retainer screw
84. Retainer screw

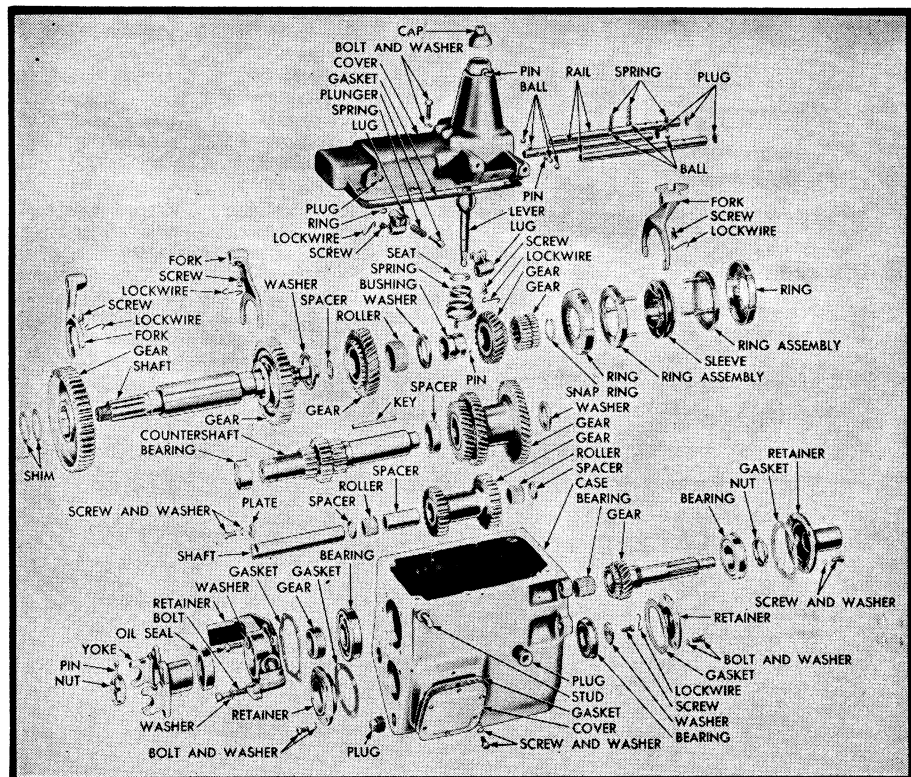


Fig. 10 New Process five-speed synchronesh transmission, 1950-56

- ing, rollers and fourth speed gear.
11. Remove third speed gear locating washer, third speed gear and rollers.
 12. Remove second and third speed sliding gear.
 13. Remove low and reverse sliding gear.
 14. Remove countershaft rear bearing retainer and gasket, retainer washer screws, washer and bearing. Move the countershaft to the rear of the case by prying between case and fifth speed countershaft gear. Pull rear bearing off countershaft with puller.
 15. Lift countershaft up and out of case.
 16. Remove countershaft front bearing retainer ring and drive front bearing and retainer out of case.
 17. Remove reverse idler gear shaft, gears, bearings and bearing spacer.
 18. The countershaft drive gear, fourth, third, second and reverse gears can be removed by using an arbor press.

Assemble

When assembling the transmission, all operations are performed in the reverse order of that given for disassembling, but the following precautions must be observed:

1. Fourth speed gear end play should be .001" to .007". This end play is controlled by shims which are furnished in thicknesses of .003" and .005".
2. Third speed gear end play should be from zero to .009".
3. Pack third and fourth speed gears with a high grade medium cup grease to hold the rollers in place while assembling.
4. Use new (unused) snap rings and oil seals.
5. The two lower bolts for the clutch shaft bearing retainer have thinner heads than the two upper bolts to provide clearance.

1950-56 NEW PROCESS 5 SPEED SYNCHROMESH

Disassemble. Figs. 9 & 10

1. Remove nut from companion yoke.
2. Remove hand brake linkage and band.
3. Pull off brake drum and companion yoke.
4. Remove transmission cover.
5. Remove rear bearing retainer and

- seal assembly, and speedometer drive gear.
6. Remove main drive gear bearing retainer, gear and bearing.
 7. Remove snap ring and pull rear bearing from case. Remove shim pack and tie shims together for re-assembly.
 8. Remove synchronizer snap ring and slide synchronizer gear forward. Then slide synchronizer from mainshaft.
 9. Lift mainshaft assembly out of case through sliding gears. Then remove sliding gears from case.
 10. Remove reverse idler shaft lock plate, pull out shaft and lift gear from case.
 11. Remove rear countershaft bearing retainer and bearing. Then remove front countershaft retainer, cap screws and lock plate, and remove bearing. Lift countershaft assembly from case.

Reassembly

Reverse Idler Gear—Install spacer in gear. Coat roller bearings with grease and install a complete set of 31 rollers in each end of the gear. Install a thrust washer in each end of the gear.

Countershaft—Install spacer and drive key in shaft keyway. Remove all burrs from key and shaft and press gear cluster onto shaft until gears bottom on spacer. Then install thrust washer on forward end of shaft.

Mainshaft—Coat third speed gear roller bearings with grease and place in third speed gear. Install thrust washer on mainshaft. Position third speed gear with spur teeth toward rear of shaft and slide gear on shaft.

Install lock pin in fourth speed gear (fifth on overdrive units). Place thrust washer on shaft and install bushing on shaft. Position fourth (or fifth) speed gear with shortest teeth toward front end of shaft. Install gear on bushing.

Install mainshaft synchronizer gear on mainshaft and secure with snap ring in shaft groove. Check snap ring for proper thickness by testing third speed gear end play. Snap rings are available in .002" steps each to obtain desired end play of .006 to .008".

Position second speed gear with shift fork groove toward rear of shaft and slide gear on shaft.

Main Drive Gear—Install bearing on

shaft. Install lock nut and tighten securely to seat bearing against gear shoulder. Install snap ring in bearing groove. Lubricate mainshaft pilot bearing and place it in main drive gear bore.

Installation In Case

Countershaft—Install snap ring on countershaft front bearing and tap bearing into case. Lower countershaft in case and insert shaft into front bearing. Install new gasket on rear bearing retainer and tap rear bearing and retainer assembly into case and on countershaft. Install retainer cap screws and lock washers and tighten securely. Install countershaft front bearing lock plate and secure screws with lock wire. Install front bearing retainer, using a new gasket, and tighten securely.

Reverse Idler Gear—Place gear in position and tap shaft through case and gear until notch in shaft is flush with rear face of transmission case. Install shaft lock plate.

Mainshaft & Main Drive Gear—Place low and reverse gear in case. Lower mainshaft into case, passing it through low and reverse gear. Then insert shaft through rear of case far enough to install synchronizer parts one at a time on front end of shaft.

Insert main drive gear in case, tapping it with a soft hammer until the bearing snap ring is seated against case. Install main drive gear bearing retainer, using a new gasket, and tighten securely.

Place synchronizer outer stop ring on main drive gear and position front end of mainshaft into pilot bearing. Then install shim pack (as removed) on rear end of mainshaft.

Install snap ring on mainshaft rear bearing. Tap bearing into case until retainer seats against case. Install speedometer gear on mainshaft. Install mainshaft rear bearing retainer, using new gaskets, and tighten securely.

Install companion yoke and nut, tightening nut from 95-135 lbs. ft. torque. Check gears in neutral and in all speeds for free rotation.

Check synchronizer end play by placing feeler gauges diametrically opposite each other. End play should be .040 to .060"; if not within these limits, adjust by removing or adding shims at the rear of the case to obtain the desired result.

With gears in neutral, install a new gasket and install the transmission cover. Tighten cover screws to 30-40 lbs. ft. torque.

Install hand brake and fill transmission with correct amount of lubricant.